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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 16:36:44 ON 28 SEP 2005

=> file agricola caplus biosis  
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|                     | ENTRY      | SESSION |
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FILE 'AGRICOLA' ENTERED AT 16:36:53 ON 28 SEP 2005

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FILE 'BIOSIS' ENTERED AT 16:36:53 ON 28 SEP 2005  
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=> s flavanone 3-hydroxylase  
L1 271 FLAVANONE 3-HYDROXYLASE

=> s l1 and (anti-sense or antisense or suppres? or silenc?)  
L2 31 L1 AND (ANTI-SENSE OR ANTISENSE OR SUPPRES? OR SILENC?)

=> dup rem l2

PROCESSING COMPLETED FOR L2

L3 24 DUP REM L2 (7 DUPLICATES REMOVED)

=> d 1-10 ti

L3 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method of breeding plants with yellow flowers by regulating flavonoid biosynthesis system

L3 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

TI Medicago truncatula isoflavone 2'- or 3'-hydroxylase cDNA sequences and use thereof in transgenic plants for flavonoid and isoflavonoid nutraceuticals biosynthesis

L3 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

TI Identification of inhibitors of flavanone 3-hydroxylase expression or activity in plants for screening of herbicides

L3 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

TI Biosynthetic production of flavonoid and isoflavonoid nutraceuticals by genetic manipulation of enzymes in plants

L3 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1

TI EST analysis of genes involved in secondary metabolism in Camellia sinensis (tea), using suppression subtractive hybridization

L3 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2

TI RNase P as a tool for disruption of gene expression in maize cells

L3 ANSWER 7 OF 24 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 3

TI Proteomic analysis on symbiotic differentiation of mitochondria in soybean nodules.

L3 ANSWER 8 OF 24 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI Inactivation of DFR (dihydroflavonol 4-reductase) gene transcription results in blockage of anthocyanin production in yellow onions (Allium cepa).

L3 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method to increase isoflavonoid levels through genetic engineering to modulate to gene expression in phenylpropanoid biosynthetic pathway in transgenic plants

L3 ANSWER 10 OF 24 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

TI Plant flavanone-3-hydroxylase.

=> d 3 so

L3 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

SO U.S. Pat. Appl. Publ., 11 pp.  
CODEN: USXXCO

=> d 3 pi

L3 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO. | KIND | DATE  | APPLICATION NO. | DATE  |
|------------|------|-------|-----------------|-------|
| -----      | ---- | ----- | -----           | ----- |

=> d 4 so

L3 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 SO PCT Int. Appl., 80 pp.  
 CODEN: PIXXD2

=> d 4 pi

L3 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2004024079   | A2   | 20040325 | WO 2003-US28454 | 20030910 |
| WO 2004024079   | C1   | 20050317 |                 |          |
| WO 2004024079   | A3   | 20050519 |                 |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |      |          |                 |          |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |          |
| US 2004128711   | A1   | 20040701 | US 2003-659755  | 20030910 |
| EP 1555870  | A2   | 20050727 | EP 2003-752235  | 20030910 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK   |      |          |                 |          |

=> d 9 ab

L3 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

AB This invention pertains to methods of increasing isoflavonoid production in isoflavonoid-producing plants by transforming plants with at least one construct expressing at least a portion of a **flavanone 3-hydroxylase**, a C1 myb transcription factor, and an R-type myc transcription factor that regulate expression of genes in the phenylpropanoid pathway. Specifically, isoflavone levels in Glycine max (soybean) are increased via metabolic engineering of the complex phenylpropanoid biosynthetic pathway through **suppression of flavanone 3-hydroxylase (F3H)** to block the anthocyanin branch of the pathway, in combination with expressing C1/R fusion protein CRC to activate other related gene expression. The F3H **suppression** vector AC21 contains a portion of FSH gene (antisense presumably, not specified, under the control of a seed-specific promoter) that can promote formation of a stem loop structure and thus inhibit F3H gene expression. The CRC vector (pOY135) encodes a fusion protein (under the control of phaseolin promoter) which contain corn C1 myb domain to amino acid 125, the entire coding region of the Lc allele of R, and C1 transcription activation domain (from amino acid 126 to the C-terminus of C1). Higher levels of isoflavones (4-times than wild-type), and decreased genistein and increased the daidzein levels are detected in transgenic soybean seed.

=> d 9 pi

L3 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 2003106633  | A2   | 20031224 | WO 2003-US18663 | 20030612 |
| WO 2003106633  | A3   | 20041007 |                 |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, |      |          |                 |          |

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,  
 PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 US 2004006795 A1 20040108 US 2003-459159 20030611

=> d 10 ab

L3 ANSWER 10 OF 24 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on  
 STN  
 AB This invention relates to an isolated nucleic acid fragment encoding a  
**flavanone-3-hydroxylase**. The invention also  
 relates to the construction of a chimeric gene encoding all or a portion  
 of the **flavanone-3-hydroxylase**, in sense or  
**antisense** orientation, wherein expression of the chimeric gene  
 results in production of altered levels of the **flavanone-3-hydroxylase** in a transformed host cell.

=> d 10 pi

L3 ANSWER 10 OF 24 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on  
 STN  
 PI US 6570064 20030527

=> d 11-20 ti

L3 ANSWER 11 OF 24 AGRICOLA Compiled and distributed by the National  
 Agricultural Library of the Department of Agriculture of the United States  
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 (2005) on STN DUPLICATE 4  
 TI Metabolic engineering to increase isoflavone biosynthesis in soybean seed.

L3 ANSWER 12 OF 24 AGRICOLA Compiled and distributed by the National  
 Agricultural Library of the Department of Agriculture of the United States  
 of America. It contains copyrighted materials. All rights reserved.  
 (2005) on STN DUPLICATE 5  
 TI Modification of flower color and fragrance by **antisense**  
**suppression of the flavanone 3-hydroxylase gene**.

L3 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Seed specific promoter of Arabidopsis TT1 gene and method for modifying  
 TT1 gene expression and flavonoid content of plants

L3 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Genetic engineering of agronomic and ornamental traits in carnation

L3 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Transgenic plants and method for transforming carnations

L3 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Method for preparing transgenic plants with reduced **flavanone-3-hydroxylase**  
 activity and enhanced resistance to  
 phytopathogenic fungi and bacteria

L3 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Method for preparing plants with reduced flavanone hydroxylase activity  
 and increased levels of flavonoids and phenolic compounds and use of  
 extracts

L3 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Methods for producing transgenic plants with reduced flavanone hydroxylase

activity and enhanced chemical stress resistance

- L3 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Flavonoid biosynthesis in Gerbera-hybrids: enzymology and genetics
- L3 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Flavanone-3-hydroxylases of soybean and Impatiens balsamina, the genes encoding them and the control of flavonol secondary metabolism

=> d 12 pi

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- L3 ANSWER 12 OF 24 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 5
- SO Molecular breeding : new strategies in plant improvement, 2002. Vol. 9, No. 1. p. 33-41  
Publisher: Dordrecht ; Boston : Kluwer Academic Publishers, c1995-  
CODEN: MOBRFL; ISSN: 1380-3743

=> d 12 so

- L3 ANSWER 12 OF 24 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 5
- SO Molecular breeding : new strategies in plant improvement, 2002. Vol. 9, No. 1. p. 33-41  
Publisher: Dordrecht ; Boston : Kluwer Academic Publishers, c1995-  
CODEN: MOBRFL; ISSN: 1380-3743

=> d 12 ab

- L3 ANSWER 12 OF 24 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 5
- AB Anthocyanins are the major pigments contributing to carnation flower coloration. Most carnation varieties are sterile and hence molecular breeding is an attractive approach to creating novel colors in this commercially important crop. Characterization of anthocyanins in the flowers of the modern carnation cv. Eilat revealed that only the orange pelargonidin accumulates, due to a lack of both flavonoid 3',5'-hydroxylase and flavonoid 3'-hydroxylase activities. To modify flower color in cv. Eilat, we used antisense suppression to block the expression of a gene encoding flavanone 3-hydroxylase, a key step in the anthocyanin pathway. The transgenic plants exhibited flower color modifications ranging from attenuation to complete loss of their original orange/reddish color. In the latter, only traces of pelargonidin were detected. Dramatic suppression of flavanone 3-hydroxylase level/activity in these transgenes was confirmed by northern blot, RT-PCR and enzymatic assays. The new phenotype has been stable for over 4 years of vegetative propagation. Moreover, transgenic plants with severe color modification were more fragrant than control plants. GC-MS headspace analyses revealed that transgenic anti-f3h flowers emit higher levels of methyl benzoate. The possible interrelation between pathways leading to anthocyanin and fragrance production is discussed.

=> d 12 au

L3 ANSWER 12 OF 24 AGRICOLA Compiled and distributed by the National  
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of America. It contains copyrighted materials. All rights reserved.  
(2005) on STN DUPLICATE 5  
AU Zuker, A.; Tzfira, T.; Ben-Meir, H.; Ovadis, M.; Shklarman, E.; Itzhaki,  
H.; Forkmann, G.; Martens, S.; Neta-Sharir, I.; Weiss, D.; Vainstein, A.

=> d 13 ab

L3 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB The invention relates to a method for producing a plant with modified gene  
expression comprising the stable integration of the gene TT1 seed-specific  
promoter linked to a desired gene in the genome of plant cells or plant  
tissues, and the regeneration of the resulting plant cells or plant  
tissues to produce plants. The invention also relates to a method for  
producing plants with a modified flavonoid content comprising the stable  
integration of the TT1 gene or cDNA in the genome of plant cells or plant  
tissues, and the regeneration of the resulting plant cells or plant  
tissues to produce plants. Thus, the Arabidopsis thaliana TT1 gene and  
cDNA were cloned and sequenced. Mutation of this gene affected the color  
of the seed coat. The TT1 sequence contained zinc finger-like domains.  
The TT1 protein was localized to the cell nucleus.

=> d 13 pi

L3 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.    | KIND   | DATE     | APPLICATION NO.  | DATE     |
|---------------|--|----------|------------------|----------|
| WO 2001002590 | A2   | 20010111 | WO 2000-DE2233   | 20000703 |
| WO 2001002590 | A3   | 20010809 |                  |          |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                  |          |
| RW:           | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                  |          |
| DE 19930570   | A1   | 20010111 | DE 1999-19930570 | 19990702 |
| CA 2379477    | AA   | 20010111 | CA 2000-2379477  | 20000703 |
| EP 1190081    | A2   | 20020327 | EP 2000-958118   | 20000703 |
| R:            | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO   |          |                  |          |

=> d 14 ab

L3 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB A review. Genetic engineering of carnation (*Dianthus caryophyllus* L.),  
which ranks third in the world flower market, is a highly desirable goal  
for both researchers and com. companies. Recently, we developed a unique  
and efficient transformation procedure for this cut flower. The main  
features of this carnation transformation procedure, which has been fully  
characterized, are its efficiency (ca. 2 transgenes per 10 explants) and  
suitability to numerous cultivars. The established transformation  
procedure was used to generate carnations with novel agronomic and  
ornamental traits. To obtain fungal resistance, transgenic carnation with  
osmotin, PR-1 and/or chitinase genes were generated. A high level of  
resistance in these transgenes to a major carnation pathogen (*Fusarium  
oxysporum* f. sp. *dianthi*, race 2) was demonstrated in greenhouse tests.  
The rolC gene from *Agrobacterium rhizogenes*, driven by a CaMV 35S  
promoter, was harnessed to generate carnation plants with improved  
performance: transgenic lines exhibited dramatically improved rooting  
ability and production yield (in terms of both number of stem cuttings and number of



flowering stalks per mother plant). Moreover, these traits were stable following 2 yr of greenhouse testing. Interestingly, in carnation, rolC did not lead to the highly neg. traits often ascribed to rol genes. An antisense approach was employed to block the anthocyanin biosynthetic pathway, using the flavanone 3-hydroxylase (fht) gene cloned from carnation; transgenic carnations were generated in an array of colors from a highly com. successful monochromatic variety. Dramatic suppression of fht level/activity in transgenes that had lost their original color was confirmed by northern blot, RT-PCR and enzymic assays. Sensory evaluation tests demonstrated that flowers of these carnation transgenes were also more fragrant than those of control plants. Furthermore, GC-MS analyses of volatiles revealed that the level of the benzoic acid derivative, methylbenzoate, was 10 to 100 times higher in these transgenes than in non-transgenic plants. The levels of analyzed fragrance compds. representing other metabolic pathways (terpenoids and fatty acid derivs.) were not affected in these transgenes. Two years of greenhouse testing have revealed that the transgenic lines are true-to-type and that the traits of interest (color, fragrance) are stable. These results, demonstrating the possibility of diverting metabolic flow from anthocyanins to the production of benzoic acid derivs., reveal an alternative approach to olfactory enhancement of flower fragrance.

=> d 14 so

L3 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 SO Acta Horticulturae (2001), 560(Proceedings of the 4th International Symposium on In Vitro Culture and Horticultural Breeding, 2000), 91-94  
 CODEN: AHORA2; ISSN: 0567-7572

=> d 14 au

L3 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 AU Zuker, A.; Shklarman, E.; Scovel, G.; Ben-Meir, H.; Ovadis, M.; Neta-Sharir, I.; Ben-Yephet, Y.; Weiss, D.; Watad, A.; Vainstein, A.

=> d 15 ab

L3 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
 AB A method of transforming a carnation (Dianthus L.) plant genome with a DNA mol. The method comprises (a) preparing stem explants from carnation cuttings; (b) wounding the explants by microprojectile bombardment; (c) cocultivating the wounded explants with Agrobacterium comprising the DNA mol. under defined conditions of exposure to dark followed by light; (d) excising shoots from the cultivated wounded explants and removing the leaves from the shoots; and (e) culturing the leaves to obtain transgenic shoots transformed with the DNA mol. Also disclosed are a rolC-transgenic carnation with improved agronomic traits and enhancement of flower fragrance by antisense suppression of the flavonoid gene fht.

=> d 15 pi

L3 ANSWER 15 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| WO 2000050613 | A2   | 20000831 | WO 2000-IL110   | 20000222 |
| WO 2000050613 | A3   | 20001214 |                 |          |

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,

DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

=> d 16 ab

L3 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB A method for enhancing the resistance of a plant to phytopathogenic fungi and bacteria comprises reducing the **flavanone-3-hydroxylase** activity by mol. biol. methods, e.g., by expression of an **flavanone-3-hydroxylase antisense** nucleic acid in the plant. Plants with enhanced disease resistance are also disclosed. Thus, tomatoes expressing a fragment of the **flavanone-3-hydroxylase** cDNA in the **antisense** direction was prepared These transgenic plants displayed enhanced resistance to *Clavibacter michiganensis michiganensis* and to *Phytophthora infestans*.

=> d 16 so

L3 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
SO Ger. Offen., 8 pp.  
CODEN: GWXXBX

=> d 16 pi

L3 ANSWER 16 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.    | KIND   | DATE     | APPLICATION NO.   | DATE     |
|---------------|--|----------|-------------------|----------|
| DE 19927575   | A1   | 20001221 | DE 1999-19927575  | 19990617 |
| CA 2340329    | AA   | 20001228 | CA 2000-2340329   | 20000607 |
| WO 2000078981 | A1   | 20001228 | WO 2000-EP5259    | 20000607 |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                   |          |
| RW:           | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                   |          |
| EP 1102856    | A1   | 20010530 | EP 2000-945715    | 20000607 |
| R:            | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO   |          |                   |          |
| BR 2000006873 | A  | 20010807 | BR 2000-6873      | 20000607 |
| TR 200100561  | T1   | 20010821 | TR 2001-200100561 | 20000607 |
| JP 2003505016 | T2   | 20030212 | JP 2001-505721    | 20000607 |
| ZA 2001001327 | A  | 20020218 | ZA 2001-1327      | 20010216 |

=> d 17 ab

L3 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB A method for producing plants with reduced **flavanone-3-hydroxylase** activity by genetic engineering, e.g., using **antisense** technol., is disclosed. These plants contain enhanced levels of flavonoids and phenolic compds. Exts. of such plants may be used in food, food supplements, pharmaceuticals/health products, and cosmetics. Thus, tomato plants with reduced **flavanone-3-hydroxylase** activity were prepared Exts. of these plants were shown to inhibit cholesterol biosynthesis by rat hepatocytes.

=> d 17 so

L3 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
SO Ger. Offen., 8 pp.



=&gt; d 17 pi

L3 ANSWER 17 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| DE 19927574   | A1   | 20001221 | DE 1999-19927574 | 19990617 |
| AU 9946903  | A1   | 20010109 | AU 1999-46903    | 19990618 |
| CA 2340319  | AA   | 20001228 | CA 2000-2340319  | 20000607 |
| WO 2000078980   | A1   | 20001228 | WO 2000-EP5257   | 20000607 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                  |          |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |                  |          |
| AU 2000059704   | A5   | 20010109 | AU 2000-59704    | 20000607 |
| EP 1102855  | A1   | 20010530 | EP 2000-945714   | 20000607 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO   |      |          |                  |          |
| BR 2000006869   | A    | 20010807 | BR 2000-6869     | 20000607 |
| JP 2003503032   | T2   | 20030128 | JP 2001-505720   | 20000607 |
| BG 105246   | A    | 20011031 | BG 2001-105246   | 20010213 |
| ZA 2001001328   | A    | 20020218 | ZA 2001-1328     | 20010216 |

=&gt; d 18 pi

L3 ANSWER 18 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE     |
|--|------|----------|------------------|----------|
| DE 19927568  | A1   | 20001221 | DE 1999-19927568 | 19990617 |
| CA 2340279   | AA   | 20001228 | CA 2000-2340279  | 20000607 |
| WO 2000078979  | A1   | 20001228 | WO 2000-EP5249   | 20000607 |
| W: AU, CA, JP, US  |      |          |                  |          |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                  |          |
| EP 1102854   | A1   | 20010530 | EP 2000-942024   | 20000607 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI  |      |          |                  |          |
| JP 2003503031  | T2   | 20030128 | JP 2001-505719   | 20000607 |

=&gt; d 19 ab

L3 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

AB The biosynthetic pathway to anthocyanins, flavones and flavonols is well known. Chemogenetic investigations of Gerbera flowers indicated two blocks at different steps of the pathway leading to acyanic flowers. One block most probably concerns **flavanone 3-hydroxylase** (FHT) and the other dihydroflavonol 4-reductase (DFR). The formation of flavones is assumed to be catalyzed by flavone synthase II (FNS II). Chemogenetic investigations indicated that this step is controlled by a gene named Fns. Up to now, no mutant was found for regulation of the enzyme activity of flavonol synthase (FLS). The formation of cyanidin instead of pelargonidin depends on the activity of the enzyme flavonoid 3'-hydroxylase (F3'H). This hydroxylation reaction is assumed to be controlled by the gene named F3'h. Surprisingly, in some lines the formation of cyanidin was found to be **suppressed** by an as yet not identified dominant factor.

=&gt; d 19 so

L3 ANSWER 19 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
SO Acta Horticulturae (2000), 508(Proceedings of the Nineteenth International  
Symposium on Improvement of Ornamental Plants, 1998), 39-44  
CODEN: AHORA2; ISSN: 0567-7572

=> d 20 ab

L3 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB Flavanone-3-hydroxylases of soybean and Impatiens balsamina are identified  
and the genes encoding them are cloned. The genes can be used to alter  
levels of the enzyme and metabolite flux through the flavonol,  
anthocyanidin, catechin, and proanthocyanidin pathways of secondary metabolism  
in plant cells by expressing them from a suitable promoter in sense or  
antisense orientation.

=> d 20 so

L3 ANSWER 20 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
SO PCT Int. Appl., 40 pp.  
CODEN: PIXXD2

=> d 20 pi

| L3 | ANSWER 20 OF 24   | CAPLUS | COPYRIGHT 2005 ACS on STN |                 |          |
|----|---|--------|---------------------------|-----------------|----------|
|    | PATENT NO.  | KIND   | DATE                      | APPLICATION NO. | DATE     |
|    | -----   | ----   | -----                     | -----           | -----    |
| PI | WO 9943825  | A1     | 19990902                  | WO 1999-US3200  | 19990216 |
|    | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |        |                           |                 |          |
|    | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |        |                           |                 |          |
|    | AU 9927660  | A1     | 19990915                  | AU 1999-27660   | 19990216 |
|    | BR 9909414  | A      | 20010109                  | BR 1999-9414    | 19990216 |
|    | EP 1066385  | A1     | 20010110                  | EP 1999-908163  | 19990216 |
|    | R: DE, FR, GB   |        |                           |                 |          |
|    | US 6570064  | B1     | 20030527                  | US 2000-645168  | 20000824 |

=> d 21-24 ti

L3 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Genes associated with fruit ripening in strawberries and their use in the  
genetic engineering of ripening characteristics

L3 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Identification of genes encoding EFE in tomato

L3 ANSWER 23 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Manipulation of condensed tannin biosynthesis in forage legumes

L3 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Flavanone 3-hydroxylase activity in cultured  
cells of roselle (Hibiscus sabdariffa L.)

=> d 24 ab

L3 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN  
AB The suspension-cultured cells of roselle produced anthocyanin when  
cultured in a medium containing IAA, whereas the production of anthocyanin was  
suppressed when the cells were cultured with 2,4-D. The similar  
activities of flavanone 3-hydroxylase were  
detected in both anthocyanin-producing and non-producing cells, indicating

that this enzyme is not involved with the regulation of anthocyanin biosynthesis.

=> d 22 ab

L3 ANSWER 22 OF 24 CAPLUS COPYRIGHT 2005 ACS on STN

AB The results presented here clearly show that genes homologous to the pTOM13 cDNA encode the complete EFE (ethylene-forming enzyme) in tomato. Previous expts. on EFE have led to the conclusion that it required intact membranes for activity (Yang, 1985) however the predicted structure of any of the three polypeptides encoded by the three pTOM13-homologous genes from tomato strongly suggest that EFE is located in the cytosol. The above evidence which suggests that EFE is a hydroxylase has prompted other investigators to try to purify EFE using techniques which previously had been used to successfully extract flavanone-3-hydroxylase. Both Ververidis and John (1991) and Fernandez-Maculet and Yang (1992) have now successfully extracted EFE in a soluble form. The latter group have suggested that the previously observed requirement for membrane integrity was a result of their sequestration of iron and ascorbate (required by EFE for activity) and the loose binding of EFE to these membranes during cell disruption. The antisense results demonstrate the usefulness of this simple technique both for the identification of gene function and for the creation of novel phenotypes. The ability to express pTOM13 homologous genes in Saccharomyces cerevisiae will allow the detailed anal. of the EFE protein by site directed mutagenesis. It should also allow the biochem. discrimination between the three different EFES present in tomato. Finally, the anal. of the DNA or RNA sequences which control the expression of EFE will lead to the identification of the factors and events which trigger the onset of ethylene biosynthesis.

=> dis his

(FILE 'HOME' ENTERED AT 16:36:44 ON 28 SEP 2005)

FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 16:36:53 ON 28 SEP 2005

L1 271 S FLAVANONE 3-HYDROXYLASE

L2 31 S L1 AND (ANTI-SENSE OR ANTISENSE OR SUPPRES? OR SILENC?)

L3 24 DUP REM L2 (7 DUPLICATES REMOVED)

=> s l1 and (fragrance or odor or smell)

L4 5 L1 AND (FRAGRANCE OR ODOR OR SMELL)

=> dup rem l4

PROCESSING COMPLETED FOR L4

L5 3 DUP REM L4 (2 DUPLICATES REMOVED)

=> d 1-3 ti

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TI Modification of flower color and fragrance by antisense suppression of the flavanone 3-hydroxylase gene.

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Genetic engineering of agronomic and ornamental traits in carnation

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Transgenic plants and method for transforming carnations

=> d pi

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in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.

REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):d so

'D' IS NOT A VALID FORMAT

In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.

REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ti

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=> d so

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(2005) on STN DUPLICATE 1  
S0 Molecular breeding : new strategies in plant improvement, 2002. Vol. 9, No. 1. p. 33-41  
Publisher: Dordrecht ; Boston : Kluwer Academic Publishers, c1995-  
CODEN: MOBRFL; ISSN: 1380-3743

=> d 2 pi

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

=> d 2 so

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
S0 Acta Horticulturae (2001), 560(Proceedings of the 4th International Symposium on In Vitro Culture and Horticultural Breeding, 2000), 91-94  
CODEN: AHORA2; ISSN: 0567-7572

=> d 3 pi

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2000050613 | A2   | 20000831 | WO 2000-IL110   | 20000222 |
| WO 2000050613 | A3   | 20001214 |                 |          |
| W:            | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                 |          |
| RW:           | GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                 |          |

=> s ((vainstein a?) or (vainstein, a?))/au

L6 174 ((VAINSTEIN A?) OR (VAINSTEIN, A?))/AU

=> s l6 and flavanone 3-hydroxylase

L7 5 L6 AND FLAVANONE 3-HYDROXYLASE

=> dup rem l7

PROCESSING COMPLETED FOR L7

L8 3 DUP REM L7 (2 DUPLICATES REMOVED)

=> d 1-3 ti

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TI Genetic engineering of agronomic and ornamental traits in carnation

L8 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Transgenic plants and method for transforming carnations

=> s ((zucker a?) or (zucker, a?))/au

L9 126 ((ZUKER A?) OR (ZUKER, A?))/AU

=> s l9and flavanone 3-hydroxylase

L10 0 L9AND FLAVANONE 3-HYDROXYLASE

=> s ((ovadis m?) or (ovadis, m?))/au

L11 87 ((OVADIS M?) OR (OVADIS, M?))/AU

=> s l9 and flavanone 3-hydroxylase

L12 5 L9 AND FLAVANONE 3-HYDROXYLASE

=> dup rem l12

PROCESSING COMPLETED FOR L12

L13 3 DUP REM L12 (2 DUPLICATES REMOVED)

=> d 1-3 ti

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TI Genetic engineering of agronomic and ornamental traits in carnation

L13 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Transgenic plants and method for transforming carnations

=> s l11 and flavanone 3-hydroxylase

L14 5 L11 AND FLAVANONE 3-HYDROXYLASE

=> dup rem l14

PROCESSING COMPLETED FOR L14

L15 3 DUP REM L14 (2 DUPLICATES REMOVED)

=> d 1-3 ti

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(2005) on STN DUPLICATE 1

TI Modification of flower color and fragrance by antisense suppression of the  
flavanone 3-hydroxylase gene.

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TI Genetic engineering of agronomic and ornamental traits in carnation

L15 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Transgenic plants and method for transforming carnations

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|                          |                 | <i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>          |                  |
| <input type="checkbox"/> | L7              | L6 and (fragrance or odor or smell)            | 3                |
| <input type="checkbox"/> | L6              | L5 and (antisense or anti-sense or suppress\$) | 20               |
| <input type="checkbox"/> | L5              | l2 and carnation                               | 21               |
| <input type="checkbox"/> | L4              | L3 and (fragrance or smell or odor)            | 9                |
| <input type="checkbox"/> | L3              | L2 and (antisense or anti-sense)               | 38               |
| <input type="checkbox"/> | L2              | flavanone 3-hydroxylase                        | 43               |
| <input type="checkbox"/> | L1              | flavonone 3-hydroxylase                        | 1                |

END OF SEARCH HISTORY